

To that end, stations 40 to 47 for cleaning the tanks are provided in the vicinity of each robot 10 to 17. Station 40 is supplied with air via a conduit 40A and with solvent via a conduit 40S, while a drain conduit 40P allows the paint and solvent residues resulting from a cleaning operation to be collected. The other stations are connected in the same manner to their environment.

After the product contained in the tank 30 has been used, the robot 10 approaches the tank 30 and the atomizer 20 towards the station 40, as represented by arrow F_1 in Figure 2. A plate 40f of station 40 is then applied on the atomizer 20, this plate being provided with connection means 40e adapted to cooperate with corresponding connection means 20e provided on the atomizer 20. Inside the robot 10 there are provided conduits (not shown) connecting the atomizer 20 to the tank 30 and making it possible, via means 20e, to supply the tank 30 with air and solvent and to collect the residue thereof.

In this way, the station 40 makes it possible to clean the atomizer 20 and the tank 30 before they are used again.

The same applies for stations 41 to 47 and the other atomizers and tanks.

For filling the tanks 30, 32, 34 and 36, it is provided that principal tanks 50 circulate on a conveyor 52 leaving a loading zone 53 and arriving at an unloading zone 54. The conveyor 52 comprises a branch 52a and a branch 52b substantially parallel to direction X-X', the circulation taking place in the direction of advance of the conveyor on branch 52a and in the opposite direction on branch 52b.

Each principal tank 50 has a capacity equal to the sum of the capacities of tanks 30, 32, 34 and 36 and is provided with connection means 50a provided to cooperate with connection means 30a arranged on or in the vicinity of the tank 30.

Tanks 32, 34 and 36 are likewise provided with such connection means 32a, 34a and 36a.

Functioning is as follows: Depending on the shade provided for a body entering the installation, a tank 50 is selected and disposed, by a manipulator robot (not shown), on the loading zone from which it is conducted by the conveyor 52 up to the robot 10. After the preceding body has been coated, the robot 10 pivots and docks on the cleaning station 40 as indicated hereinabove. The position of the tank 50 is in that case such that the movement F_1 of the robot induces a coupling of the means 30a and 50a, which makes it possible to take from the tank 50 the quantity provided to be stored in the tank 30 and applied by the atomizer 20 on said body.

With the foregoing in mind, cleaning of the atomizer 20 and of the tank 30 and filling of the tank 30 take place thanks to a single movement of the robot 10. In other words, the position of cleaning of the atomizer and of the tank is the same as the position of filling of the tank.

As the robot 10 is docked on the station 40 during filling of the tank 30 from the tank 50, it is possible to supply the tank 50 with air for pressurization from the station 40 and through the robot 10. In this way, the transfer of products from the tank 50 towards the tank 30 may take place under pressure, thus reducing the cycle time.

The air supply 40A of station 40 may also be used for actuating stirring means provided in the tank 50, in order to homogenize the product before it is transferred towards the tank 30.

During this cleaning and filling, the body 1 in question progresses in the direction of the robot 10 and, at the end of the operation of filling of the tank 30, the application with the atomizer 20 may begin.

The conveyor 52 then displaces the principal tank 50 in the direction of the robot 12 at whose level the tank 32 is cleaned and filled like the tank 30 with a view to applying the same product on the same body.

5 The tank 50 then continues its advance in the direction of robots 14 and 16 with a view to successive cleaning and filling of tanks 34 and 36.

After the last robot, the tank 50 is conducted towards the unloading zone 54 by a return along branch 52b of the conveyor 52.

10 The same applies to the opposite side of the bodies 1 where a conveyor 52' is provided, between a loading zone 53' and an unloading zone 54', for conducting principal tanks 50' up to robots 11, 13, 15 and 17 with a view to filling tanks 31, 33, 35 and 37.

15 If other robots are provided downstream of robots 16 and 17, the capacity of tanks 50 and 50' is increased. In any case, the tanks 50 and 50' transport a sufficient quantity of paint to completely coat one side of a body 1. In practice, it may be envisaged to fill the tanks 50 and 50' with a quantity slightly greater than that which is theoretically needed, in order to have a reserve available, for example for a manual application.

20 Where a manual application station is provided, the tanks 50 and 50' are conducted up to this station. The painters' guns are equipped with incorporated tanks which may be filled from the principal tanks. According to an advantageous variant, the hand guns are not equipped with tanks incorporated therein, the guns being directly supplied by the principal tanks 50 and 50' via flexible pipes. In that case, a means for pressurizing the interior volume of the principal tanks may be provided.

25 Racks 55 and 55' are arranged in the vicinity of the loading zones 53 and 53' for supplying the conveyors 52 and 52' with principal tanks 50 and 50', as a